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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,268

06/09/2006

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EXAMINER

LIU, MICHAEL

ART UNIT

PAPER NUMBER

2851

MAIL DATE

DELIVERY MODE

11/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,268

Applicant(s)

NISHII ET AL.

Examiner

Michael Liu

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20061019, 20060609.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Receipt is acknowledged of the Preliminary Amendment filed 09 June 2006.

Information Disclosure Statement

2. The information disclosure statement filed 19 October 2006 and 09 June 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because of having too many references. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

The examiner notes that the Information Disclosure Statements, dated 19 October 2006 and 09 June 2006 contain 220 references. The applicant is requested to highlight those documents which have been specifically brought to applicant's attention and/or are known to be of most significance.

For example, what is the relevance of the O'Donnell reference (2005/0217135, Cite #10 of 20061019)? And how is the WIPO reference WO 2005/050324 (Cite #182 of 20061019) relevant to the application at hand? What about the NGL Workshop document by Owa (Cite #202 of 20061019)? There are far too many references for the IDS to be of any use to the examiner.

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MPEP 2004 [R-2] Aids to Compliance With Duty of Disclosure

It is desirable to avoid the submission of long lists of documents if it can be avoided. Eliminate clearly irrelevant and marginally pertinent cumulative information. If a long list is submitted, highlight those documents which have been specifically brought to applicant's attention and/or are known to be of most significance. See Penn Yan Boats, Inc. v. Sea Lark Boats, Inc., 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), aff'd, 479 F.2d 1338, 178 USPQ 577 (5th Cir. 1973), cert. denied, 414 U.S. 874 (1974). But cf. Molins PLC v. Textron Inc., 48 F.3d 1172, 33 USPQ2d 1823 (Fed. Cir. 1995).

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Stage apparatus, exposure apparatus, and exposure method with recovery device having lyophilic portion.

Claim Objections

4. Claim 7 is objected to because of the following informalities: "portiion" is a typo that should be corrected to --portion--. Appropriate correction is required.

Claim 13 is objected to because of the following informalities: The claim is an improper dependent claim. The claim is directed to a stage apparatus according to claim 1. However, it is conceivable that another apparatus other than the apparatus of claim 1 can make the stage apparatus. Hence, the claim does not further limit claim 1 as required by 35 U.S.C. 112, 4th paragraph. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taberelli et al (4,509,852) in view of Hayashi et al (2001/0035897).

Re claim 1: Taberelli et al discloses a stage apparatus [see Fig 4] provided with a holder 1 having a substrate holding surface [top part of 1] which holds a substrate 8, and a stage [X-stage] which supports and moves the holder, comprising:

a recovery device 5, which is disposed in the vicinity of the holder.

Taberelli et al does not disclose expressly that the recovery device has a lyophilic portion that recovers a liquid.

Hayashi et al discloses a recovery device 302 that has a lyophilic portion, of which at least a part is lyophilic, and that recovers a liquid [recording liquid] using the lyophilic portion. [Par 0145: Feed tube 302 is hydrophilic.]

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use the feed tube of Hayashi et al as the recovery device of Taberelli et al, for the purpose of reducing the staying of bubbles and hence prevent the liquid flow from being obstructed by bubbles, thus permitting the liquid to be conducted efficiently [par 0145].

Re claim 2: Taberelli et al discloses said recovery device 5 has a suction device [pump 10] that suctions the liquid guided to said lyophilic portion.

Re claim 3: Taberelli et al discloses said substrate 8 is suctioned to said holder 1 [due to vacuum lines].

Taberelli et al does not disclose expressly suction force of suction device is greater than suction force of substrate suction.

However, Taberelli et al does teach the liquid 6 flowing in the container 2 from the feeding pipes 4 to the discharge pipes 5. In order for the liquid to flow towards pump 10 via discharge pipes 5 and to not be attracted to the vacuum lines 9 for substrate suction, the suction of pump 10 must be greater than the suction of the vacuum lines 9.

Therefore, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to recognize that the suction force of the pump is greater than the suction force of the substrate vacuum lines, for forcing liquid towards recovery device 5 rather than to the substrate suction 9.

Re claim 4: Taberelli et al discloses wherein said suction device is disposed below said lyophilic portion [see Fig 4], and said lyophilic portion has an inclined portion [5 is flexible and inclined], which is inclined toward said suction device [see Fig 4].

Re claim 5: Taberelli et al discloses wherein said recovery device has a first portion that is higher than said substrate holding surface. [See Fig 3: First portion of recovery portion 5 coming out of the container 2 is higher than the holder 1.]

Re claim 6: Taberelli et al discloses wherein said recovery device has a recessed portion [bottom part of 5 under surface] that suctions the liquid by the capillary phenomenon. [Recovery device 5 can be considered a capillary tube that suctions the liquid by the capillary phenomenon.]

Re claim 7: Taberelli et al discloses all limitations of the claimed invention except for the recessed portion being lyophilic.

Hayashi et al discloses a lyophilic coating [par 0145].

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to coat the recessed portion of Taberelli with the hydrophilic coating of Hayashi et al, for the purpose of reducing the staying of bubbles and hence prevent the liquid flow from being obstructed by bubbles, thus permitting the liquid to be conducted efficiently [par 0145].

Re claim 8: Taberelli et al discloses said recovery device has a surface that is substantially parallel to said substrate holding surface [bottom part of 5 under surface], and a liquid repellent portion of which at least a part is liquid repellent [col 4, lines 12-14: photoresist layer on disk is liquid repellent due to the liquid being easily removable].

Re claim 9: Taberelli et al discloses wherein at least a part of said holder is liquid repellent. [Col 4, lines 12-14: Photoresist layer on disk, which is a part of said holder, is liquid repellent.]

Re claim 10: Taberelli et al discloses wherein said substrate holding surface is liquid repellent. [Col 4, lines 12-14: Photoresist layer on disk, which is on the wafer holding surface, is liquid repellent.]

Re claim 11: Taberelli et al discloses wherein said lyophilic portion is disposed so that a space is formed between an outer circumferential part of said substrate and said lyophilic portion. [See Fig 3: A space exists between an outer circumferential part of said substrate 8 and said lyophilic portion in 5.]

Re claim 12: Taberelli et al discloses wherein a portion [top part of holder] of said holder that opposes said lyophilic portion is liquid repellent [col 4, lines 12-14: PR is liquid repellent].

Re claim 13: Taberelli discloses an exposure apparatus [see Fig 4], comprising:
a stage apparatus according to claim 1.

Re claims 14-15: Taberelli et al discloses an exposure method that exposes a pattern onto a substrate 8 held by a holder 1, comprising the steps of:

disposing a portion 5 in the vicinity of the holder;

supplying liquid 6 to the substrate; and

exposing the pattern [see Fig 4].

Hayashi et al teaches disposing a lyophilic portion, at least a part of which is lyophilic, and that recovers part of the liquid using the lyophilic portion. [Par 0032: A polymer is applied to make feed tube 132 hydrophilic.]

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use the feed tube of Hayashi et al as the recovery device of Taberelli et al, for the purpose of reducing the staying of bubbles and hence prevent the liquid flow from being obstructed by bubbles, thus permitting the liquid to be conducted efficiently [par 0145].

Re claim 16: Taberelli et al discloses a part of said holder is liquid repellent [col 4, lines 12-14: PR on disk on top of holder is liquid repellent].

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Liu whose telephone number is 571-272-9019. The examiner can normally be reached on Monday through Friday 9 am - 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Liu
Examiner
Art Unit 2851

ML 20071101



DIANE I. LEE
SUPERVISORY PATENT EXAMINER